

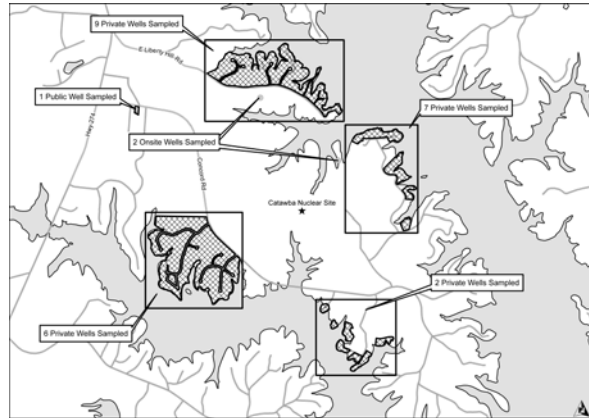
Bethel Community Well Water Sampling for Tritium

Overview:

Staff with the S.C. Department of Health and Environmental Control recently sampled water from 27 wells located around the Catawba Nuclear Station, operated by Duke Energy, in York County. Of the 27 wells, two were on-site wells at the Catawba Nuclear Station, one was an off-site public well and 24 were private residential wells; located immediately adjacent to the facility. The samples were collected by DHEC staff and were tested only for tritium.

The selection of wells was to target wells closest to the fence line of the Catawba Nuclear Station.

By starting with well testing in the areas closest to a site, it can be determined how far and in which direction, contaminants may have traveled from a source. If these test results show no problem, then we know the locations farther away will not test positive.



These tests were conducted in October 2007 after Duke Energy reported results from an on-site monitoring well located one-half mile inside the facility's property. The tritium level found in that monitoring well was 42,335 picocuries per liter of water. The well where the tritium was found is used for environmental monitoring and not for drinking water. DHEC will continue working with Duke Energy to investigate the cause of this result.

Sampling:

- Well sampling took place over two days with a total of 27 wells tested.
- On-site sampling occurred on October 10th.
 - Two on-site wells were tested.
- Off-site sampling occurred on October 12th.
 - 24 private off-site wells and one public off-site well were sampled.

Results:

- Of the 27 wells sampled, 25 wells showed no tritium and two wells showed trace amounts.
- Tritium results are reported in picocuries per liter. One picocurie per liter means one part tritium to 1 trillion parts water - or one in one trillion.
- The U.S. Environmental Protection Agency and DHEC safe drinking water standard for tritium is 20,000 picocuries per liter.
- DHEC laboratory's lowest detectible level for tritium is approximately 200 picocuries per liter of water, which is 1/100th of the safe drinking water standard.
 - Anything lower than approximately 200 picocuries is considered less than a lower-than-detectible level or Lower Limit of Detection; shown as <LLD.
 - Tritium is a radioactive form of hydrogen. Tritium can bond with oxygen to form water and can move in groundwater. The radiation from tritium is considered weak and cannot penetrate human skin. It can enter the body through the mouth and nose. Tritium exists naturally in small amounts in the upper atmosphere and groundwater and can come from man-made sources.
 - Since some tritium is naturally occurring, even labs with the lowest possible detectable levels will never show a "zero" tritium result.
- On-site results:
 - One environmental monitoring well at Catawba Nuclear Station showed 319 picocuries per liter of water.
- Off-site results:
 - One off-site private well showed 348 picocuries per liter of water, well below the drinking water standard. Retesting of this well is underway to confirm the finding.
- Again, all test results are below the federal and state safe drinking water standard.

On-going and Future Actions:

- Follow-up retesting is being conducted on the one off-site private well that showed 348 picocuries per liter of water. DHEC will continue working with Duke Energy to investigate the cause of the initial on-site result.
- DHEC will hold a community meeting to discuss the results with residents Dec. 6th at Crowders Creek Middle School at 7 p.m.

Understanding Exposure:

- The average American receives 360 millirem from natural or other sources.
- U.S. Nuclear Regulatory Commission tritium standard is 25 millirem per year or 500,000 picocuries per liter of water.
- The EPA's safe drinking water standard is 20,000 picocuries per liter of water, also based upon drinking two liters every day per year, not to exceed four millirem per year.
- A typical chest x-ray yields approximately 10 millirem. Working under fluorescent light bulbs or the use of a cell phones will result in several millirem each.

If you have additional questions about your well sampling, well testing results or information contained in this document, please call **1-800-476-9677** during normal business hours on Monday through Friday, 8 a.m. to 5 p.m.

**Bethel Community
Well Water Testing Results**

Date	Sample #	Tritium Results (pCi/L)	Notes
10/10/2007	On-site Well 1	<LLD *	On-site well # 1 – Non-Drinking Water
10/10/2007	On-site Well 2	<LLD *	On-site well # 2
10/10/2007	On-site Well 2 (duplicate)	319	On-site well # 2 (duplicate)
10/12/2007	CN-1-01	<LLD *	Private Well
10/12/2007	CN-1-02	<LLD *	Private Well
10/12/2007	CN-1-03	<LLD *	Private Well
10/12/2007	CN-1-04	<LLD *	Private Well
10/12/2007	CN-1-05	<LLD *	Private Well
10/12/2007	CN-1-06	<LLD *	Private Well
10/12/2007	CN-1-07	<LLD *	Private Well
10/12/2007	CN-2-11	<LLD *	Public Well
10/12/2007	CN-2-12	348	Private Well
10/12/2007	CN-2-13	<LLD *	Private Well
10/12/2007	CN-2-14	<LLD *	Private Well
10/12/2007	CN-2-15	<LLD *	Private Well
10/12/2007	CN-2-16	<LLD *	Private Well
10/12/2007	CN-3-21	<LLD *	Private Well
10/12/2007	CN-3-22	<LLD *	Private Well
10/12/2007	CN-3-23	<LLD *	Private Well
10/12/2007	CN-3-24	<LLD *	Private Well
10/12/2007	CN-3-25	<LLD *	Private Well
10/12/2007	CN-3-26	<LLD *	Private Well
10/12/2007	CN-4-31	<LLD *	Private Well
10/12/2007	CN-4-32	<LLD *	Private Well
10/12/2007	CN-4-33	<LLD *	Private Well
10/12/2007	CN-4-34	<LLD *	Private Well
10/12/2007	CN-4-35	<LLD *	Private Well
10/12/2007	CN-4-36	<LLD *	Private Well
10/12/2007	CN-4-37	<LLD *	Private Well
10/12/2007	CN-4-38	<LLD *	Private Well
10/12/2007	CN-4-40	<LLD *	Private Well

<LLD * = Lower Limit of Detection